THE STATUS AND HABITS OF GRAUER'S BROADBILL IN UGANDA (Aves: Eurylaemidae)

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ABSTRACT: Five examples of the very rare broadbill, *Pseudocalyptomena graueri,* from the Impenetrable Forest, southwestern Uganda, prove to be the same as topotypical east Congo birds, and not to have consistently narrower bills as was earlier suspected. The field notes accompanying the specimens cause a complete revision of our knowledge of this bird. It is primarily a denizen of the forest undergrowth, not of the tree-tops, and it feeds largely on seeds, buds and flowers, plus such insect larvae and beetles that may occur with them, and is not primarily an aerial feeder on flying insects as has been assumed in the literature.

In the course of a second collecting survey of the vertebrate fauna of the Impenetrable Forest, Kigezi, extreme southwestern Uganda, under the sponsorship of National Science Foundation grant GB 7787, to the Los Angeles County Museum of Natural History Foundation, Robert Glen and Andrew Williams obtained five specimens of Grauer's green broadbill, *Pseudocalyptomena graueri,* in May and June, 1969. These were particularly significant because two years earlier A. L. Archer had collected one male in that area, which had a very narrow, laterally compressed bill, only 8.5 mm broad at the gape, and 5.2 mm wide at the proximal (basal) end of the nares, compared with 10.6 to 11.5 mm at the gape and 7.3 to 7.6 mm at the basal edge of the nostrils in eastern Congo examples. In discussing this specimen Friedmann and Williams (1968: 22) stated that additional specimens would be of interest to determine whether or not the Impenetrable Forest birds might prove to be a racially distinct narrow billed population. The present five examples show that this is not the case, that the first one was merely unusual in the narrowness of its bill. The measurements in millimeters of the five 1969 examples, now in The Los Angeles County Museum of Natural History, are as follows: 2 males—width of bill at gape 13.2, 13.6; width of bill at basal edge of nostril 6.9, 7.1; 3 females—width of bill at gape 13.4, to 13.6; width of bill at basal edge of nostrils 7 to 7.5. As may be noted from these figures, kindly measured for me by J. R. Northern, the present series have slightly broader, not narrower, bills than the eastern Congo topotypical examples measured earlier. No Congo material was studied in connection with these five specimens, but it is obvious that the variational range in bill width in the Kigezi birds completely overlaps that of topotypical *graueri,* and that the two populations are not separable.

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That the two are not different is actually easier to understand than was the impression of a local difference suggested by Archer's single specimen in 1967. The extreme limits of the entire, and relatively narrow, area of highland forest known to be inhabited by this broadbill are barely more than 150 miles apart, an area that seems to be too small and ecologically too continuously uniform to allow for geographic differentiation. It is true that all the eastern Congo records are from the mountains to the west of the deep gorge of the Ruzizi river, but this valley does not constitute a barrier between those highlands and the mountainous forests of Kigezi. The eastern Congolese highlands extend north from the northern end of the Ruzizi river along the west shore of Lake Kivu to the Rwanda border and to that of extreme southwestern Uganda, where they are coterminous with the so-called Impenetrable Forest. Furthermore there is no reason for thinking that the broadbill is either very local or sporadic within this small total area, even though the actual specimen locality records are still few in number. Definite records from the Kivu district, eastern Congo, are the type locality about 80 kilometers west of the Ruzizi river, northwest of Lake Tanganyika; Miki, Muusi and Luvumba. In southwestern Uganda, the bird is known only from the Bwindi and Ruhizha areas of the Impenetrable Forest, Kigezi Province.

Knowledge of Grauer's broadbill as a bird, and not merely as a museum taxon, is drastically altered by the field observations by Glen and Williams that accompanied the specimens. Archer, in his field notes on the first (1967) Kigezi specimen, wrote that he shot the bird from a perch about 60 feet up in a tall tree. Rockefeller and Murphy (1933: 28) similarly found this species moving about in the upper branches of fairly tall trees. Chapin (1953: 23) noted that the green broadbill was usually found 25 to 75 feet up in forest trees near native plantations, and that in their behavior the birds were quite flycatcher-like, making short but rapid dashes after insects, which they apparently caught on the wing.

Chapin's statements were based entirely on the notes of Rockefeller and Murphy as at that time he had had no personal experience with the bird in life. Therefore the observations of Rockefeller and Murphy are taken directly from their paper. The first individual they saw was in a ". . . large tree with abundant juicy berries, a feeding place for many other species of birds"; it was not active and seemed not to be feeding. "When shot, it was catching insects about twenty feet above the ground in a vine-draped forest tree . . ." Another one was seen later ". . . slumped down close to the end of one of the uppermost boughs, then with a hop and a flit of the wings it caught an insect over its head, realighting on the perch it had just left . . ." These two observers wrote that the "normal level" for Grauer's broadbill was from 20 to 75 feet up in trees.

The picture one gets from the reports of Glen and Williams is quite different. They found the species to be a denizen, not of the higher branches,

but of the upper portions of the undergrowth, about eight feet from the ground. When an individual of the species was seen high up in a tree it had just flown there from the nearby lower vegetation. Glen considered its general behavior and actions very much like those of a waxbill rather than a flycatcher. The species looks extremely small in the field, and the short tail gives the bird a crombec-like (*Sylvietta*) appearance in flight, especially when seen from above. The birds were found, not always singly, but at times in loose groups of 2 or 3 individuals, searching about for food among the branches of a euphorbiaceous tree, *Neoboutonia* sp., with apparent lack of concern about the approach of the observers.

The stomach contents of the five present specimens reveal not the slightest indication of any aerial feeding habits. The stomach of one of them contained a single small beetle, some small seeds, and small flower buds; the second contained only flower buds; the third had the remains of small pulpy fruits; the fourth only small white flowers; and the fifth contained one small snail, one beetle, several insect larvae and a white seed.

These stomach contents are in general agreement with the fact that Rockefeller and Murphy saw one of these broadbills in a berry-laden tree, even though they witnessed no feeding. In their paper they failed to report on the contents of the stomachs of any of their specimens.

Inasmuch as the only other African broadbill genus, *Smithornis,* is known to indulge in a specialized courtship flight behavior, one wonders if the statement referred to above, of *Pseudocalyptomena* making short rapid flights might relate to a similar courtship behavior and not merely to a feeding pattern.

On one occasion Glen and Williams watched this species making short flights through the upper undergrowth of the forest and noted that the flight was of a slow and gliding nature. Even on short flights the birds rarely flapped their wings after starting but seemed to glide by preference. In *Smithornis rufolateralis* Chapin (*loc. cit*: 18) was convinced that the noises accompanying the flights was produced in the wings. He noted that the primaries had unusually stiff shafts and that the plane of their webs was twisted slightly on their distal portions. ". . . four or five of the outer primaries (but not the outermost) have unusually narrow webs toward the base, and it seems possible that air may pass between them during this special flight . . ." He noted (*loc. cit*: 22-23) that in *Pseudocalyptomena* the same remiges were fairly similar, but with ". . . just a little of the downward twist of the inner web toward the tip . . ."

Whether this slight difference could be responsible for the absence of the flight sound in the green broadbill is not at all clear, but as our collectors made no entry in their notebooks of any such sound, it would seem that these flights were unaccompanied by any special noises. The collectors did report two types of call notes from Brauer's broadbill: on one occasion they heard one of these birds give a soft *cree-cree* repeated three times; and at another

time they heard a one-syllabled high-pitched *prrrp* at intervals of about thirty seconds.

The new field notes are also of interest in that they tend to allocate *Pseudocalyptomena* ecologically more closely with *Smithornis*. The latter genus is known to nest and to feed fairly low down in the forest vegetation, the nests so far reported having been close to the ground or not more than eight feet from it. The earlier observations that conveyed the impression that the green broadbill was entirely a tree-top bird and an aerial feeder on insects must be emended in the light of new knowledge.

LITERATURE CITED

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